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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,000	06/07/2006	Shinichi Inoue	3273-0226PUS1	9234

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EXAMINER	
HEINCER, LIAM J	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
07/12/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,000	INOUE ET AL.	
	Examiner	Art Unit	
	Liam J. Heincer	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,6-8,12-14 and 22-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,6-8,12-14 and 22-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 8, 2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 6-8,12-14, and 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Considering Claims 2, 6-8,12-14, and 22-25: Claims 2, 7, 8, and 22 have been amended to add the limitation "wherein said hydrogenated natural polyisoprenoid is an ingredient in modified lattices obtained by hydrogenating natural polyisoprenoid lattices in the state of latex". The claims also include the limitation "wherein said hydrogenated natural polyisoprenoid is a polymer which is the reaction product of a natural polyisoprenoid with hydrogen in the presence of a rhodium complex hydrogenation catalyst in a solvent". The original specification presents these as alternative embodiments. "The hydrogenation reaction of a natural polyisoprenoid is carried out, for example, by reacting the natural polyisoprenoid with hydrogen in the presence of a hydrogenation catalyst in a suitable solvent. It is also acceptable to subject a latex of a natural polyisoprenoid to a hydrogenation reaction, as is described above" (pg. 13). It is therefore unclear which embodiment is being claimed in the current claims. As the claims are product by process claims, and the original specification does not appear to indicate that the different embodiments result in materially different products, the claims are being interpreted, for the purpose of further examination, as requiring either the solvent or latex based hydrogenation step.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997).

Considering Claims 2 and 6: Schauder et al. teaches a rubber like article (6:30-40) comprising an ethylene-propylene copolymer (2:25-54) that has been molded and vulcanized (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 (4:19-27).

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber/Hevea rasiliensis to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. in the molded article of Schauder et al., and the motivation to do so would

have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Schauder et al. does not teach the weight average molecular weight of the polymer. However, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2144.05. As Schauder et al. teaches that the weight average molecular weight is related to the processability of the polymer (3:41-54), a person having ordinary skill in the art at the time of invention would consider it to be a result effective variable. A such, it would have been obvious to a person having ordinary skill in the art at the time of invention to have optimized the weight average molecular weight of the polymer, and the motivation to do so would have been to produce a processable rubber composition.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997).

Considering Claims 2 and 6: Schauder et al. teaches a method for producing a rubber like article (6:30-40) comprising an ethylene-propylene copolymer (2:25-54) comprising molding and vulcanizing the article (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 (4:19-27).

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Schauder et al. does not teach the weight average molecular weight of the polymer. However, "where the general conditions of a claim are disclosed in the prior art, it is not inventive

to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2144.05. As Schauder et al. teaches that the weight average molecular weight is related to the processability of the polymer (3:41-54), a person having ordinary skill in the art at the time of invention would consider it to be a result effective variable. A such, it would have been obvious to a person having ordinary skill in the art at the time of invention to have optimized the weight average molecular weight of the polymer, and the motivation to do so would have been to produce a processable rubber composition.

Claims 8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997).

Considering Claims 8 and 12-14: Schauder et al. teaches a rubber like article (6:30-40) comprising 70 to 95 weight percent of EPDM resin and 5 to 30 weight percent of an ethylene-propylene copolymer (2:25-54) that has been molded and vulcanized (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 (4:19-27).

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Schauder et al. does not teach the weight average molecular weight of the polymer. However, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2144.05. As Schauder et al. teaches that the weight average molecular weight is related to the processability of the polymer (3:41-54), a person having ordinary skill in the art at the time of invention would consider it to be a result effective

variable. A such, it would have been obvious to a person having ordinary skill in the art at the time of invention to have optimized the weight average molecular weight of the polymer, and the motivation to do so would have been to produce a processable rubber composition.

Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997).

Considering Claims 22-25: Schauder et al. teaches a rubber like article (6:30-40) comprising an ethylene-propylene copolymer (2:25-54) that has been molded and vulcanized (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 (4:19-27).

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber/Hevea rasiliensis to a degree of hydrogenation of 100% (Table II) in the presence of hydrogen and a rhodium complex in a solvent (pg. 1648). Schauder et al. and Singha et al. are analogous art as they are concerned with the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Schauder et al. does not teach the weight average molecular weight of the polymer. However, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2144.05. As Schauder et al. teaches that the weight average molecular weight is related to the processability of the polymer (3:41-54), a person having ordinary skill in the art at the time of invention would consider it to be a result effective variable. A such, it would have been obvious to a person having ordinary skill in the art at the time of invention to have optimized the weight average molecular weight of the polymer, and the motivation to do so would have been to produce a processable rubber composition.

Response to Arguments

Applicant's arguments filed June 8, 2010 have been fully considered but they are not persuasive, because:

A) The applicants argument that Singha et al. does not teach a hydrogenated polyisoprenoid is not persuasive. The applicant requests specific citations to show that the reference teaches a hydrogenated natural polyisoprenoid. Singha et al. teaches the hydrogenation of natural rubber/Hevea brasiliensis (Title). The applicant appears to agree with this statement (pg. 6 of applicant's arguments). As the original specification teaches, natural rubber is a natural polyisoprenoid (pg. 3). Further the original specification describes the reference as teaching a hydrogenated natural rubber (pg. 4-5).

B) In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, it would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

C) The applicant's argument that there is not a reasonable expectation of success in using the product of Singha et al. in the composition of Schauder et al. is not persuasive. Singha et al. teaches that their method is an alternative to conventional methods of producing ethylene-propylene polymers. Therefore, a person having ordinary skill in the art at the time of invention would anticiopate that the polymers could be used in similar applications. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

D) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., different glass

transition temperature) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

E) The applicant's argument that Sasagawa et al. teaches high molecular weight hydrogenated polyisoprenoids have poor processability is not persuasive. The composition of Sasagawa et al. is materially different from the composition of Schauder et al. Schauder et al. teaches a blend of high and low viscosity polymers. The optimum value of the molecular weight of the high viscosity polymer would be materially different than the optimum value of Sasagawa et al.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJH
June 16, 2010

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796